

Notice of Allowability	Application No.	Applicant(s)	
	09/960,713	TAYLOR ET AL.	
	Examiner	Art Unit	
	Cindy Nguyen	2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 05/27/04.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☒ The drawings filed on 21 September 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

This is in response to amendment filed 05/27/04.

Allowable Subject Matter

Claims 1-21 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art of record and that encountered while searching for the claimed invention fails to anticipate and/or suggest: a method for synchronizing a plurality of data images in a computer system, the plurality of data images including a primary image and at least one secondary image, comprising: in the event the write attempt to the at least one secondary image fails, creating a fracture log made up of a bitmap of the changed regions that have been effected on at least one disk containing the primary image at the primary image site, and which is representative of the blocks on the primary image which have changed at the primary image site, whereby the log can be used to synchronize the primary image and the secondary image as recited in claim 1.

The prior art of record and that encountered while searching for the claimed invention fails to anticipate and/or suggest: a computer system for maintaining a plurality of data images in the computer system, the plurality of data images including a primary image and at least one secondary image, the computer system comprising: logic for creating a fracture log made up of a bitmap of the changed regions that have been effected on at least one disk containing the primary image, and which is representative of the blocks on the primary image which have changed at the primary image site as a result of a write to the primary image and for creating the fracture log

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only if a write request to a primary image and at least one secondary image fails with respect to the secondary image failure as recited in claim 12.

Regarding claims 2-11 and 13-21, these claims depend from claims 1 and 12 respectively and are therefore allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

1. Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McDowell (U.S 6260125) Asynchronous write queues, reconstruction and check pointing in disk erroring applications.

Davis et al. (U.S 5546536). Log for selective management of specific address in a shadow storage system.

Ludlam et al. (U.S 5459857). Fault tolerant disk array data storage subsystem.

Yanai et al. (U.S 6173377). Remote data mirroring.

Rastogi et al. (U.S 6205449). System and method for providing hot spare redundancy and recovery for a very large database management system.

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2. Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 703-305-4698. The examiner can normally be reached on M-F: 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Cindy Nguyen
July 28, 2004



WAYNE AMSBURY
PRIMARY PATENT EXAMINER

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